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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/600,857 | 06/19/2003 | Raymond Kong | X-1018 US | 8473 |

| 24309 7590 06/16/2004 | EXAMINER |
|---|---|
| XILINX, INC<br>ATTN: LEGAL DEPARTMENT<br>2100 LOGIC DR<br>SAN JOSE, CA 95124 | TAT, BINH C |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2825 | |

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the c rrespondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on _19 June 2003_.

2a)☐ This action is **FINAL**.      2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-29_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-29_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _19 June 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All  b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _04/08/04_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

1.      This office action is in response to application 10/233767 file on 09/01/02.

Claim 1-29 remain pending in the application.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.      Claims 1-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Stevens et al.

(US Patent 6678876).

3.      As to claims 1, 16, and 28, Stevens et al. teach a method for calculating a future cost for

use in v ' routing an integrated circuit, the conductors in the integrated circuit being modeled by a

plurality of nodes and at least one source node, the method comprising: obtaining a first node

from the plurality of nodes (see fig 11 and fig 13 element 1302 col 15 lines 35-36); obtaining a

second node that can be electrically connected to the first node (see fig 11 and fig 13 element

1302 col 14 lines 65 to col 15 lines 2); determining a cumulative routing cost of the second node

(see fig 11 and fig 13 element 1304 col 15 lines 3-16 and col 16 lines 51-53); calculating a first

distance between the second node and the source node (see fig 11 and fig 13 element 1310 col 15

lines 53 to col 16 lines 22); and setting the future cost equal to cumulative routing cost if there is

no existing future cost that corresponds to the distance or if the cumulative routing cost is less

than the existing future cost corresponding to the distance (see fig 13 and fig 14A-M col col 15 lines 52 to col 20 lines 64).

4.      As to claims 2, 17 and 29 Stevens et al. teach wherein the first distance is a Manhattan distance (see fig 13 and fig 14A-M col col 15 lines 52 to col 20 lines 64).

5.      As to claims 3, and 18 Stevens et al. teach wherein the cumulative routing cost of the second node comprises a cumulative routing cost of the first node and a routing cost of the second node (see fig 11 and fig 13 element 1304 col 15 lines 3-16 and col 16 lines 51-53).

6.      As to claims 4, and 5 Stevens et al. teach wherein the first node is a source node wherein the source node is located at one corner of the integrated circuit (see fig 11 and fig 13 element 1302 col 15 lines 35-36).

7.      As to claims 6, and 19 Stevens et al. teach wherein first distance is less than a predetermined value (see fig 13 and fig 14A-M col col 15 lines 52 to col 20 lines 64).

8.      As to claims 7, and 20 Stevens et al. teach further comprising the step of calculating a first cost slope using the cumulative routing cost and the first distance (see fig 11 and fig 13 element 1310 col 15 lines 53 to col 16 lines 22 and background).

9.      As to claims 8, and 21 Stevens et al. teach further comprising: providing a memory location for storing a cost slope value (see fig 11 and fig 13 element 1310 col 15 lines 53 to col 16 lines 22); recording the first cost slope is the memory location if the first cost slope is smaller than the cost slope value stored in the memory location or if there is no existing cost slope value in the memory location (see fig 13 and fig 14A-M col col 15 lines 52 to col 20 lines 64).

10.     As to claims 9 and 22 Stevens et al. teach further comprising: generating a two dimensional array (see fig 13 and fig 14A-M col col 15 lines 52 to col 20 lines 64); calculating a

second distance between the second node and the source node, the second distance being in an

orientation substantially perpendicular to the first distance; and storing the future cost in a

position of the array determined by the first and the second distances (see fig 13 and fig 14A-M

col col 15 lines 52 to col 20 lines 64).

11.     As to claims 10 and 23 Stevens et al. teach wherein the first and the second distances are

Manhattan distances (see fig 13 and fig 14A-M col col 15 lines 52 to col 20 lines 64).

12.     As to claim 11 Stevens et al. teach wherein the cumulative routing cost of the second

node comprises a cumulative routing cost of the first node and a routing cost of the second node

(see fig 13 and fig 14A-M col col 15 lines 52 to col 20 lines 64).

13.     As to claims 12 and 24 Stevens et al. teach wherein the first and the second distances are

less than predetermined values (see fig 13 and fig 14A-M col col 15 lines 52 to col 20 lines 64).

14.     As to claims 13 and 25 Stevens et al. teach further comprising the step of calculating a

first cost slope using the cumulative routing cost and the first distance and calculating a second

cost slope using the cumulative routing cost and the second distance (see fig 13 and fig 14A-M

col col 15 lines 52 to col 20 lines 64).

15.     As to claims 14 and 26 Stevens et al. teach further comprising: providing a first memory

location for storing a first value and a second memory location for storing a second value;

recording the first cost slope is the first memory location if the first cost slope is smaller than the

first value in the location; and recording the second cost slope in the second memory location if

the second cost slope is smaller than the second value in the location (see fig 13 and fig 14A-M

col col 15 lines 52 to col 20 lines 64).

*16.*    As to claims 15, and 27 Stevens et al. teach wherein the array is stored in a memory

device, and the array is later retrieved from the memory device to perform the routing (see fig 13

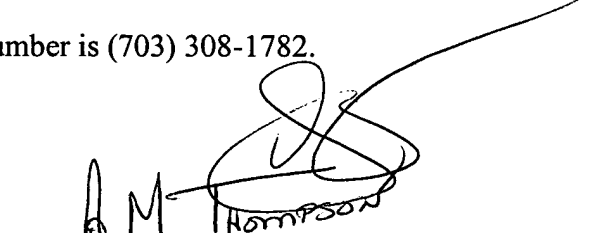and fig 14A-M col col 15 lines 52 to col 20 lines 64).

### *Conclusion*

17.    Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Binh C. Tat whose telephone number is (571) 272-1908.  The

examiner can normally be reached on 7:30 - 4:00 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mathew Smith can be reached on (571) 272-1907.  The fax phone numbers for the

organization where this application or proceeding is assigned are (571) 273-1908 for regular

communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 308-1782.

Binh Tat
Art unit 2825
June 11, 2004